

CLAIMS

What is claimed is:

1. A method of determining a reactor wall condition of a gas phase fluidized bed reactor comprising measuring a static level at a distributor plate of the reactor using a static detector assembly comprised of an electrically isolated distributor plate cap connected to the distributor plate and to an electrical lead connected to a monitor, wherein a deviation from zero in the static level indicates a poor reactor wall condition.
2. A method of determining static level at a distributor plate of a gas phase fluidized bed reactor comprising:
 - a. measuring a current flow through an electrically isolated distributor plate cap located at the distributor plate to generate current flow data, wherein the distributor plate cap is connected to an electrical lead that is further connected to a monitor; and
 - b. determining the static level from the current flow data.
3. The method of claim 1 or 2, wherein the distributor plate cap consists of a conductive metal.
4. The method of claim 3, wherein the conductive metal comprises graphite, carbon steel or stainless steel.
5. The method of claim 1 or 2, wherein the distributor plate cap further comprises an insulator located between the distributor plate and the distributor plate cap.
6. The method of claim 5, wherein the insulator comprises polytetrafluoroethylene.

7. The method of claim 1 or 2, wherein the connection between the distributor plate cap and the electrical lead further comprises a mechanical seal, wherein the seal is insulated.

8. The method of claim 1 or 2, wherein the monitor is selected from the group consisting of an electrometer, digital volt meter, ohmmeter, oscilloscope and picoammeter.

9. A method of determining a continuity disturbance in a fluidized bed gas phase reactor comprising the steps of measuring static in the reactor using a radio frequency antenna and determining a discharge frequency or a pulse amplitude, wherein a change in discharge frequency or an increased pulse amplitude as compared to a control indicates a continuity disturbance.

10. The method of claim 9, wherein the radio frequency comprises a frequency between about 15 kHz and about 1 GHz.

11. The method of claim 9, wherein the antenna comprises a shielded radio antenna.

12. The method of claim 9, wherein the radio frequency antenna further comprises an amplifier.